



Division of Agricultural Sciences  
UNIVERSITY OF CALIFORNIA

# FREEZING FOODS AT HOME

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CALIFORNIA AGRICULTURAL  
Experiment Station  
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# Freezing foods at home

can provide your family with a good variety of food throughout the year.

You can freeze foods when the supply is plentiful and keep them available the rest of the year. Freezing is a quick and easy method of preserving food. Frozen food tastes and looks more like fresh food than that preserved by any other method.

To be sure of good quality, start with good-quality food; prepare and package carefully; and freeze quickly.

Frozen food, however, does not keep indefinitely. It is protected against actual bacterial spoilage, but eventually it becomes unacceptable because of slow changes in flavor, color, and texture.

These changes vary with various foods, their quality, their wrapping materials, handling before and during freezing, and storage temperatures. This circular will help you to prepare good-quality frozen food.

## *In brief:*

- Choose high-quality food
- Use food of right maturity
- Handle the food promptly
- Process carefully
- Use correct packaging
- Seal completely
- Freeze foods promptly
- Do not freeze too much at one time
- Store at 0°F or below
- Do not store too long

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*Home Freezing of Foods*

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# FREEZING FOODS AT HOME

HELEN L. DENNING and MARION T. TATE

Freezing is a very old method of food preservation. In areas of extremely cold climate food was frozen outdoors and kept through the winter. Natural temperature, however, fluctu-

ates and the food thaws, then refreezes, and this is harmful to food quality. The mechanical home freezer enables you to preserve good-quality food for long periods of time.

## HOW FREEZING WORKS

To maintain quality, store the food at 0°F or lower. At higher temperatures storage time is limited. Food seems frozen at temperatures of 10° to 25°F but this is not low enough to stop the physical and chemical changes.

Freezing inhibits the activities of bacteria and enzymes in the food. The bacteria — living organisms — cannot function at very low temperatures. Enzymes—chemical substances that promote changes in food—need certain conditions to function, and freezing temperatures slow down their activities. In general, freezing does not kill the bacteria nor change most of the enzymes; when food is defrosted they start to function again. That is why thawed food spoils more quickly than fresh food, and should be used soon after it has been defrosted.

While freezing keeps food almost like fresh, there are certain changes. The water in the food forms ice crystals that pierce the cell structure of

the food. If food is frozen slowly, or if there is a partial defrosting and refreezing, the crystals will become larger and may affect the texture of the food. Since some of the cell walls are broken, defrosted food is more mushy. The amount of mushiness depends on water contents, fragility of food, and its treatment before and during freezing. Blanching, sugar, and various salts help protect the texture of certain foods.

Air dries out food and gives it an unpleasant appearance. The oxygen in the air causes color and flavor changes. Pack foods to exclude air as much as possible. Select packaging materials that prevent air from getting to the food. Protect certain fruits from browning by adding ascorbic acid, lemon juice, or certain salts. Sugar or use of any liquid protects food from air. Trim excess fat from meat as fat easily becomes rancid in the presence of oxygen.

## WHAT TO FREEZE

Your decision on what you want to freeze will depend, of course, on what foods are available, what your family

needs and likes, and how much freezer space you have.

The varieties of fruits and vege-



tables freeze differently. This circular tells you what we know about freezing of the most suitable varieties grown in California. You may want to do some testing on your own.

Before freezing large quantities of certain fruits and vegetables, try a few packages. If you eat these foods shortly after they have been frozen you will know the effects of freezing, but not the effects of storage, on food quality.

## CONTAINERS

Protect frozen foods during storage from loss of liquid, flavor, odor; and from absorbing foreign odors and flavors. A good-quality packaging material should be

- Moisture-vapor resistant
- Clean, durable and pliable at low temperatures
- Certain not to impart a flavor or odor to the food
- Resistant to absorbing fat, water or blood
- Easy to seal
- The size to suit your family needs.

Glass, metal and rigid plastic containers, heavy aluminum foil, and clear plastic adhesive wrap are moisture-vapor proof. Polyethylene bags and sheets, waxed and plastic laminated papers or boxes, especially made for freezing, are sufficiently moisture-vapor resistant to be satisfactory for freezing foods. For *very short* storage of frozen foods you can use such materials as household aluminum foil, and cartons for milk, cottage cheese and ice cream. (See photo opposite page.)

**Rigid Containers.** Rigid containers available on the market include those made of metal, glass, plastic and heavily waxed cardboard. They should have a tight-fitting lid. Rigid containers are suitable for freezing fruits,

Most fruits can be frozen in several ways. Try the method that will suit your needs best. After testing, you will know better how well your family likes the way the food was frozen.

Certain fresh foods do not freeze well. These include green onions, lettuce and some greens, radishes, and whole tomatoes. Tomatoes can be frozen when used as a part of a casserole dish.

vegetables and liquid packs. You may use glass canning jars for freezing foods, except those packed in water. You can buy glass jars made especially for freezing. Be certain to leave sufficient headspace (see page 12). You can re-use rigid containers after cleaning them thoroughly.

**Freezer Bags.** The most common freezer bags are the transparent polyethylene type. These bags come in various sizes and are most suitable for vegetables, meats and poultry. Bag can be used for liquid packs, but are not as convenient as the rigid containers. Press out any excess air in the bags and close them tightly by twisting the tops and tying them or using a rubber band. You may use a cardboard carton to protect the polyethylene bags, which also makes stacking easier.

**Freezer Wraps.** Heavy aluminum foil, polyethylene sheets, clear plastic adhesive wrap and the various types of coated and laminated freezer papers are all suitable freezer wraps. They are particularly suited for wrapping meat, fish, poultry and vegetables such as corn on the cob. Paper with wax on one side is not desirable and should be used only for very short storage. Shape the wrap around the food to exclude as much air as possible. Seal the package with a freezer tape.



Examples of materials and containers suitable for use in freezing.

## CARE OF THE FREEZER

Defrost your freezer periodically. Frost cuts down storage space and raises storage temperature. A partial defrosting can be done frequently, but the freezer should be completely defrosted occasionally. Defrost completely when frost reaches a depth of one-half inch over a large area of refrigerated surface. Defrost also when frost begins to accumulate on packages which have been stored only a few hours in the freezer.

Partial defrosting can be done when there is no more than a thin layer of frost on the sides of the freezer. Scrape frost carefully with a dull instrument, such as a putty knife. Dry the sides

and bottom of the freezer. The electricity does not have to be turned off.

Defrost completely when the food supply is low. Disconnect the electricity, remove all frozen food to the refrigerator, or wrap it in newspaper with some dry ice. Leave the freezer open. Let the frost melt from the parts of the freezer. A fan or pans of hot water can hurry this process. After the frost melts, wash the freezer with a solution of 2 tablespoons of baking soda to 1 quart of water. Allow the freezer to dry and air. Close the lid and turn on the current. Let the freezer run for half an hour before you replace the packages.

## LOADING THE FREEZER

Freeze your foods as soon as possible after they have been packaged. Put no more unfrozen food into a home freezer than will freeze within 24 hours. This is about 2 or 3 pounds of

food to each cubic foot of the capacity. Overloading slows down the rate of freezing and warms up the food already in the freezer. Slow freezing will mean that the foods lose quality and

may even spoil. For quickest freezing, place packages against freezing plates or coils and leave a little space be-

tween packages so that air can circulate freely. After freezing, packages may be stored close together.

## CARE OF FOOD DURING POWER FAILURE

If you know ahead of time that the power is to be turned off, turn the freezer to the coldest setting. The lower the temperature, the longer the food will take to thaw.

If the power fails, try to find out how long it will be off.

Do not open the freezer except to add dry ice or to transfer the food for storage elsewhere.

A full freezer will remain cold longer than a partially filled freezer. A full freezer will usually keep food frozen for 2 days. A half-filled freezer may not keep food frozen more than a day. Cover the freezer with blankets:

they provide insulation and help to keep the freezer cold for a while longer.

If dry ice is put into the freezer soon after it goes off, 50 pounds should keep the food temperature in a full 20 cubic foot cabinet below freezing for 3 to 4 days. If the cabinet is half-filled or less, it will remain below freezing 2 or 3 days. Work quickly with dry ice. Be sure the room is well ventilated. **Never handle dry ice with bare hands.** Place the dry ice on cardboard or boards on top of food or shelves. Don't place it directly on the packages.

## REFREEZING

When foods have partially thawed and are refrozen, they will lose some of their quality. Consider thawed frozen foods as perishable products and keep them under refrigeration until used. The conditions in which the food has thawed will determine if the food should be refrozen.

You may safely refreeze partially thawed food if:

- It has been thawing for a brief time (such as being left in the refrigerator instead of the freezer overnight during temporary power failure).

- It still feels cold and contains ice crystals.

Use refrozen foods as soon as possible.

If foods have slowly thawed over a period of several days to a temperature of 40°F, they are not likely to be fit for refreezing. Meats, poultry, most vegetables and some prepared foods may become unsafe to eat. Most fruits and fruit products soon develop an undesirable flavor.

Discard any off-odor, off-flavor or sour food for it may contain microorganisms that make it unsafe.

## FREEZING FRUITS

Most fruits can be frozen. Needless to say, the finished product will be no

better in quality and maturity than the fresh fruit you prepare for freezing.



To freeze fruits follow the general directions given in these 11 points:

1. Choose the variety that freezes well.
2. Select fruit of good quality—ripe, but not soft ripe; firm-textured, highly colored and of distinct flavor.
3. Freeze fruit as soon after harvesting as possible. An exception would be pears, which are picked green and held until ripened.
4. Wash fruit quickly in cold water. Use a stainless steel knife for paring or cutting. Slice directly into the carton containing sirup or add sugar quickly to the fruit.
5. Pack fruit in sugar sirup or with sugar to retain the color, flavor, and texture. Fruits packed without sugar will not retain their quality as long. Add an anti-darkening agent to light-colored fruits to prevent darkening.

Sugar sirup is used in various types, depending upon the amount of sugar they contain. Sugar content in the sirup will depend on the tartness of the fruit and your family's taste. (See

pages 12 to 24 for recommendations for individual fruits.) More than 3 cups of sugar to 1 quart water makes most fruit too sweet. Less than 1 cup of sugar to 1 quart of water is seldom satisfactory. About  $\frac{1}{2}$  to  $\frac{2}{3}$  cup of sirup is needed for each pint package of fruit. Fruits packed in sirup are generally more satisfactory for uncooked desserts, fruit cocktail and sauces. Use sugar and water in the following proportions for the various types of sirup:

FOR:	SUGAR (cups)	WATER (cups)	YIELD OF SIRUP (cups)
30 per cent sirup	2	4	5
35 per cent sirup	$2\frac{1}{2}$	4	$5\frac{1}{3}$
40 per cent sirup	3	4	$5\frac{1}{2}$
50 per cent sirup	$4\frac{3}{4}$	4	$6\frac{1}{2}$
60 per cent sirup	7	4	$7\frac{3}{4}$

You may replace about  $\frac{1}{4}$  of the sugar by corn sirup or honey. Higher proportions will give a very different flavor. The combination of corn sirup and sugar will not be as sweet. Honey has a definite flavor.

Either add the sweetening to cold

Using sugar sirup or dry sugar pack on fruit: hold fruit under sirup or juice with crumpled paper.





When adding sugar to the fruit, mix carefully and avoid crushing.

water and stir until the sugar is completely dissolved or heat the sirup to dissolve the sugar. **DO NOT BOIL.** Chill the hot sirup thoroughly before using it. Store sirup in the refrigerator until used.

The sirup should cover the fruit in the package. Use a crumpled piece of aluminum foil, waxed paper, or other water resistant paper on the top of the fruit to help hold the fruit under the sirup and exclude air (see photo on page 9).

**Dry sugar pack**, the addition of 1 part sugar by weight to 4 or 5 parts fruit by weight, makes most fruits sweet enough and protects their quality. Here, too, the amount of sugar needed will vary with the tartness of the fruit and your family's taste.

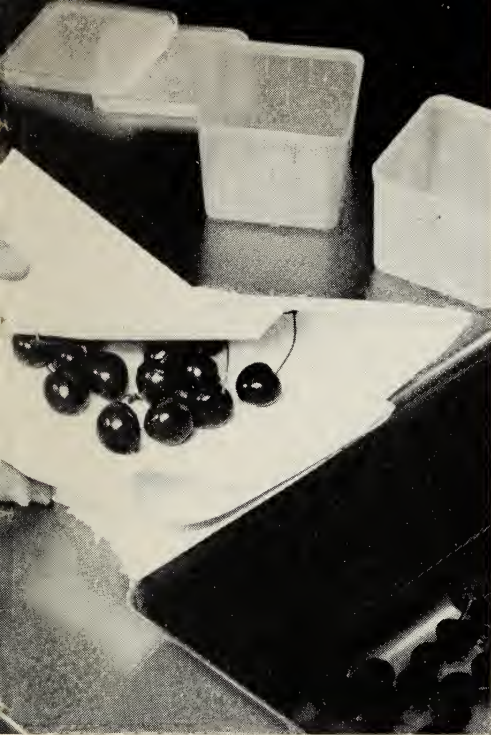
Cut the fruit into a shallow pan or bowl. Mix the sugar and fruit gently with a large spoon or pancake turner until the juice is drawn out and the sugar is dissolved (photo, above). After

the fruit and juice are packed in the container, place a crumpled piece of water-resistant paper on the top of the fruit to hold the fruit down into the juice.

**Unsweetened pack** can be used in fruits used in pies, for jams and preserves, and other cooked dishes. The fruit is frozen without sweetening or liquid. It is sliced or crushed in its own juice, and some fruits may even be frozen whole. (See photo on page 9.) However, changes in color, flavor, and texture occur more rapidly than in fruits packed with sugar or sirup, or in other liquid.

**Pectin pack** may be used for strawberries and other berries, peaches, peeled apricots and cherries. Very little sugar is needed, and the fresh flavor and color are retained. To prepare the pectin sirup: combine 1 box powdered pectin and 1 cup water in saucepan. Boil one minute, stirring constantly. Add  $\frac{1}{2}$  cup sugar to the





Freezing of whole fruit requires washing and careful drying.

hot pectin, stirring until dissolved. Add enough cold water to make 2 cups sirup. Chill. Place fruit in carton and cover with pectin sirup. Gently separate fruit to coat each piece with the sirup.

**6. Protect certain light-colored fruits from browning (see photo, below). The**

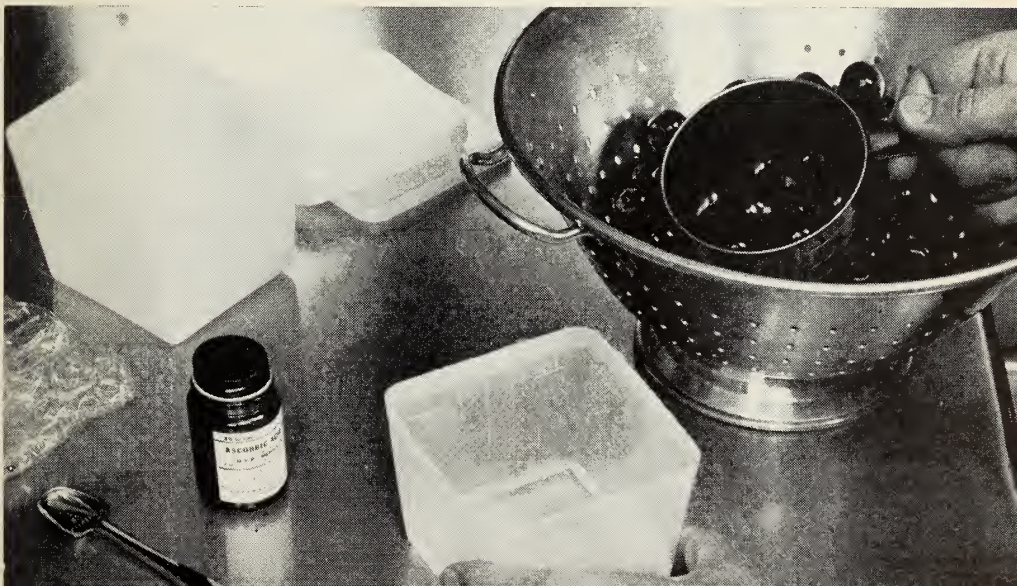
most satisfactory ways of keeping these fruits from darkening are given in the table of methods of preparing fruits for freezing (pages 10 to 22). Speed in preparing food for freezing and fast freezing will also reduce the amount of browning.

Ascorbic acid is most often used to protect fruit from darkening. The crystalline or powdered form of ascorbic acid is more satisfactory than tablets. Tablets are harder to dissolve and the filler used in the tablets may make the sirup cloudy. One teaspoon of crystalline ascorbic acid weighs about 3 grams. There are about 8 teaspoons of ascorbic acid in a 25 gram container (approximately 1 ounce). The amount of ascorbic acid in tablets is usually expressed in milligrams. The following are equivalent amounts of ascorbic acid.

CRYSTALLINE	TABLETS
1/8 teaspoon	375 milligrams
1/4 teaspoon	750 milligrams
1/2 teaspoon	1,500 milligrams
3/4 teaspoon	2,250 milligrams
1 teaspoon	3,000 milligrams

Dissolve the ascorbic acid with a little cold water in a glass or cup. Add it to

To protect fruit from browning, ascorbic acid is added to the sirup.



the fruit or sirup. Tablets will dissolve more easily if crushed first.

**Ascorbic acid mixtures** are usually a combination of ascorbic acid and sugar, or sugar and citric acid. Follow the directions of the manufacturer when using any of these preparations. Because of its dilution with other materials, ascorbic acid purchased in these forms may be more expensive than pure ascorbic acid.

**Lemon juice or citric acid** are sometimes used instead of ascorbic acid. They are not as effective and do change the flavor of the fruit. The tartness helps the flavor of some fruits such as figs.

**Steaming** a few minutes before packing is enough to control the darkening of some fruits such as apples.

**7. Use a container** that protects the quality of the fruit while in storage. Select container size according to the use of fruit and the amount you will use in one meal. Rigid-type containers are convenient. They may be heavily waxed, plastic, aluminum, or glass freezer jars.

Pack fruit and juice or sirup tightly into container. Leave headspace for expansion. Follow these general guidelines:

FOR CONTAINER WITH WIDE TOP OPENING	HEADSPACE
pints	1/2"
quarts	1"
FOR CONTAINER WITH NARROW TOP OPENING	
pints	3/4"
quarts	1 1/2"
FOR DRY PACK	
all containers	1/2"

**8. Use crumpled water resistant paper** to hold fruit below the surface of the juice or sirup.

**9. Seal.**

**10. Label** with name, date and future use of fruit, such as pie, jam or dessert and amount of sugar used in pack.

**11. Freeze** at once.

*How to Prepare Fruits for Freezing*

FRUIT	PREPARATION
<b>APPLES</b>	<b>For fruit cocktail or uncooked desserts:</b>
<b>Select fruit for these characteristics:</b>	Wash, peel, and core.
Firm-ripe	Put 1/2 cup sirup in each freezer container; slice apples directly into the cold sirup. <i>Use 40 per cent sirup—3 cups sugar to 4 cups water, plus 1/2 teaspoon ascorbic acid per quart sirup.</i>
Not mealy	Press slices down and add sirup to cover.
Skin tight, bright, and free from dark spots	Seal and freeze.
Low browning tendency	<b>Slices for pie or other cooked dishes:</b>
Firm, greenish-white flesh	A. Wash, peel, and core.
Distinctive flavor	Slice directly into a solution of 3
<b>Varieties:</b>	
Yellow Newtown Pippin	
Golden Delicious	
Jonathan	
Winesap	



**Apples (cont.)**

Rome Beauty  
 Greening  
 Gravenstein

tablespoons lemon juice or 3  
 tablespoons salt to 1 gallon cold  
 water.

Never allow slices to remain in  
 solution more than 2 to 3 min-  
 utes.

Place slices on a tray covered with  
 several thicknesses of paper towel-  
 ing. Place tray in refrigerator to  
 drain.

Pack in cartons or in freezer bags.  
 Seal and freeze.

*If desired, add one part sugar to 4  
 parts apples.*

**B. For long-time storage—**

Have ready the following two solu-  
 tions:

$\frac{1}{3}$  cup salt to 3 gallons water.

Make enough to cover the  
 amount of apples to be sliced.

$\frac{1}{3}$  cup salt and 1 teaspoon (5.7  
 grams) sodium bisulfite for  
 each 3 gallons of water.

Use glass, earthenware, alumium,  
 stainless steel, or unchipped por-  
 celain containers. Do not use cop-  
 per, iron, tin, or galvanized tin.

Use no more than 25 pounds of  
 apples for 3 gallons of bisulfite  
 solution.

Wash, peel, and core apples.

Slice directly into salt and water  
 solution.

Dip apple slices from the salt solu-  
 tion into the salt-sodium bisul-  
 fite solution. Leave for 2 minutes.

Drain slices thoroughly. Pack in  
 containers or in freezer bags. Seal  
 and freeze.

**Whole Fruits:**

Use is limited to pies and cooked  
 dishes, storage time is short.

Use only very crisp apples. Wash,  
 dry. Pack in freezer bags. Seal and  
 freeze.

## Apples (cont.)

## Apple Sauce:

Prepare as usual. Cool, pack. Seal and freeze.

## Baked Apples:

Prepare as usual. Cool. Wrap each apple; pack in cartons. Seal and freeze. Use within 2 months.

## APRICOTS

## Select fruit for these characteristics:

- Firm-ripe
- Good yellow color, practically no green shoulders
- Rich, characteristic flavor
- Fairly firm texture
- Tender, smooth skin

## Varieties:

- Blenheim (Royal)
- Moorpark (Routers Peach)

Apricots are frozen *peeled or unpeeled*

## To peel:

Cover with boiling water for 15 to 30 seconds, then in cold running water for a minute or two.

Rub off peels.

## Unpeeled:

Heat in boiling water  $\frac{1}{2}$  minute to keep skins from toughening. Cool in cold running water.

*Halves or Quarters:*

## Sirup pack:

Put  $\frac{1}{2}$  cup sirup in each freezer container. Cut apricots directly into the cold sirup. *Use 40 per cent sirup. 3 cups sugar to 4 cups water, plus  $\frac{3}{4}$  teaspoon ascorbic acid per quart sirup.*

Press fruit down and add sirup to cover. Seal and freeze.

## Sugar Pack—for use in pies and other cooked desserts:

*Dissolve  $\frac{1}{4}$  teaspoon ascorbic acid in  $\frac{1}{4}$  cup cold water and sprinkle over 1 quart apricots.*

*Mix  $\frac{1}{2}$  cup sugar with each quart of fruit. Stir until sugar is dissolved.*

Pack apricots into containers and press down until fruit is covered with juice. Seal and freeze.

## Crushed:

Select fully ripe fruit. Peel. Pit and crush coarsely.

*Dissolve  $\frac{1}{4}$  teaspoon ascorbic acid in  $\frac{1}{4}$  cup cold water and sprinkle over 1 quart crushed apricots.*

*Mix 1 cup sugar with each quart of crushed fruit. Stir until sugar is dissolved.*

Pack into containers. Seal, freeze.

**AVOCADOS****Select fruit for these characteristics:**

Soft-ripe

Rinds free from dark blemishes.

Wash, peel and pit fruit

Puree.

**Unsweetened**—for use within 4 to 5 months:

For salads, sandwiches, dips, etc.

*Add ¼ teaspoon ascorbic acid, or 3 tablespoons lemon juice to each quart puree.***Sweetened:**

For ice creams, sherbets, and other desserts.

*Sugar: Add 1 cup to each quart puree.*

Pack. Seal and freeze.

**BANANAS**

Home freezing not recommended

**BERRIES** (except cranberries and strawberries)**Select fruit for these characteristics:**

Sweet

Soft

Plump, with glossy skin

Fully ripe

Lack of pronounced seediness or tough cores

Rich flavor

**Varieties:**

Black

Boysen

Lawton

Logan

Olallie

Young

**Raspberries:**

any good quality red, black, or purple variety

**Blueberries (Huckleberries)**

Elderberries

Any small-seeded berries

Freeze as soon after picking as possible. Refrigerate or keep in the coolest place available until frozen.

Prepare only a few berries at a time.

Sort. Wash carefully in ice water or in cold running water.

Drain thoroughly.

Blackberries may discolor badly and turn sour if not packed in sirup.

**Sirup Pack:**

Preferred for berries to be served uncooked.

Put berries in freezer container. Cover with cold sirup. *Use 40 per cent sirup—3 cups sugar to 4 cups water.* Seal and freeze.**Sugar Pack:****Blackberries**Use ¾ cup sugar to quart berries  
**Blueberries, Elderberries, and Huckleberries—**Use ½ cup sugar to quart berries  
**Raspberries—**Use ¼ cup sugar to quart berries  
Mix sugar with berries carefully to avoid crushing.

Fill containers. Seal and freeze.

**Whole, unsweetened:**

Wash and drain. Pack carefully in plastic bags or rigid containers.

FRUIT	PREPARATION
<p><b>Berries, (cont.)</b></p>	<p>Seal and freeze.</p> <p>If you freeze only a small amount, you will obtain a better product by spreading the berries on a tray and freezing them before packing. Pack in containers and seal when solidly frozen.</p>
<p><b>CANTALOUPE</b> See Melons</p>	
<p><b>CHERRIES, SOUR</b></p> <p>Select fruit for these characteristics:</p> <ul style="list-style-type: none"> <li>Uniform bright red color</li> <li>Tangy, acid flavor</li> <li>Fairly firm texture</li> <li>Tender skin</li> </ul> <p><b>Varieties:</b></p> <ul style="list-style-type: none"> <li>Montmorency</li> <li>Morello</li> <li>Early Richmond</li> </ul>	<p>Keep cherries cool. If delay unavoidable, keep as near 32°F as possible. Sort. Wash in water containing ice. (Soaking in ice water may make pitting easier.) Pit if desired.</p> <p><b>Sirup Pack</b>—for use in uncooked desserts:</p> <p>Put cherries in freezer container. Cover with cold sirup. <i>Use 60 or 65 per cent sirup—7 or 8¾ cups sugar to 4 cups water.</i> Seal and freeze.</p> <p><b>Sugar Pack</b>—for pies, jams, and other cooked uses:</p> <p><i>To one quart (1⅓ pounds) cherries add ¾ to 1 cup sugar.</i></p> <p>Mix until sugar is dissolved. Fill containers. Seal and freeze.</p> <p><b>Crushed:</b></p> <p>Crush cherries coarsely.</p> <p><i>To one quart crushed fruit add 1 to 1½ cups sugar.</i></p> <p>Mix until sugar is dissolved. Fill containers. Seal and freeze.</p>
<p><b>CHERRIES, SWEET</b></p> <p>Select fruit for these characteristics:</p> <ul style="list-style-type: none"> <li>Large size</li> <li>Tender skin</li> <li>Rich flavor</li> <li>Uniform color in dark type, red blush in light types</li> <li>Little tendency to brown</li> <li>Pick cherries riper than for fresh use</li> </ul> <p><b>Varieties:</b></p> <ul style="list-style-type: none"> <li>Bing</li> <li>Black Republican</li> <li>Napoleon (Royal Ann)</li> </ul>	<p><b>Whole, Sirup Pack:</b></p> <p>Stem. Sort. Wash. Drain.</p> <p>Pitting is not necessary, but pits tend to give a slight flavoring.</p> <p>Put cherries in freezer container. Cover with cold sirup. <i>Use 40 per cent sirup—3 cups sugar to 4 parts water, plus ½ teaspoon ascorbic acid per quart sirup.</i> Seal and freeze.</p> <p><b>Whole, Dry Pack:</b></p> <p>Storage time is limited to 2 to 3 months.</p> <p>Leave stems on. Wash and dry cher-</p>



FRUIT	PREPARATION
<b>Cherries, Sweet (cont.)</b> Lambert Sam Black Tartarian Van	ries. Pack in freezer containers. Seal and freeze. <b>Crushed</b> —for use as dessert topping: Crush pitted cherries coarsely. <i>To each quart of crushed fruit add 1½ cups sugar and ¼ teaspoon ascorbic acid.</i> Mix until sugar is dissolved. Fill containers. Seal and freeze.
<b>COCONUT (fresh)</b> <b>Select fruit for these characteristics:</b> Fully ripe coconut which still retains coconut water	Break the husked coconut into halves by pounding the shell around the center. Grate or grind the coconut. <b>Plain:</b> Pack into freezer containers, pressing the coconut down. Seal and freeze. <b>Sugar Pack:</b> <i>Mix ¼ pound (½ cup) sugar with 2 pounds (about 6 cups) grated coconut.</i> Pack, pressing cococut down. Seal and freeze.
<b>CRANBERRIES</b> <b>Select fruit for these characteristics:</b> Deep red uniform color Glossy skin Firm Tangy acid flavor <b>Varieties:</b> Howes Early Black McFarlin	Wash. Stem. Sort. Dry. Pack dry. Seal and freeze. <b>Sauce:</b> Wash. Stem. Sort. Cook as usual for cranberry sauce, adding sugar to taste. Pack. Seal and freeze.
<b>CURRENTS, RED</b> <b>Select fruit for these characteristics:</b> Bright red Fully ripe, with no green on any fruit in cluster <b>Varieties:</b> Perfection Red Lake Faye's Prolific Red Cherry	Wash, preferably in ice water. Stem. <i>Pack without sugar, or use ¾ cup sugar to 1 quart fruit (about 1⅓ pounds).</i> Mix sugar with currants carefully. Pack. Seal and freeze.

FRUIT	PREPARATION
<b>DATES</b> Select fruit for these characteristics: Good flavor Tender	Wash. Drain well. Pit if desired. Pack. Seal and freeze.
<b>FIGS</b> Select fruit for these characteristics: Soft, ripe Tender flesh and skin Rich flavor and aroma <b>Varieties:</b> Black Mission Calimyrna Kadota Gillette Granata Lattarula Black Spanish Celeste	Wash in ice water. Sort. Stem. Peel if desired. (The skin toughens on freezing.) Leave whole, halve, or slice. <b>Unsweetened:</b> Use within 3 months, unless cooked. Pack dry, or cover with water. <i>If water used, add <math>\frac{3}{4}</math> teaspoon ascorbic acid per quart water.</i> Seal and freeze. <b>Sirup Pack:</b> Pack in freezer containers. Fill with cold sirup. <i>Use 1 to 2 cups sugar per quart water, plus <math>\frac{3}{4}</math> teaspoon ascorbic acid or <math>\frac{1}{2}</math> cup lemon juice per quart sirup.</i> Seal and freeze.
<b>GRAPEFRUIT</b> Select fruit for these characteristics: Fully matured Tree-ripened Soft-ripe <b>Varieties:</b> Marsh Seedless Marsh Pink Duncan Seedling	Wash. Peel, cutting deep enough to remove white membrane under skin. Section, using stainless steel knife; remove membranes and seeds. Freeze with or without sirup. <b>Sirup Pack:</b> Pack. Cover with cold sirup. <i>Use 40 per cent sirup, 3 cups sugar to 4 cups liquid. (Liquid may be part juice from fruit.)</i> Seal and freeze.
<b>GRAPES</b> Satisfactory only for pies, juice, and jellies, or in mixed fruits Select fruit for these characteristics: Firm-ripe Tender skins <b>Varieties:</b> Muscat Thompson Seedless Ribier Perlette	Wash and stem. Leave seedless whole. Cut table grapes with seeds in half and remove seeds. Best frozen with sirup, but grapes to be used for juice or jelly can be frozen without sweetening. <b>Sirup Pack:</b> Pack. Cover with cold sirup. <i>Use 30 per cent sirup, 2 cups sugar to 4 cups water.</i> Seal and freeze.

**Grapes (cont.)**

Cardinal  
Red Malaga  
Tokay

**Unsweetened:**

Pack. Seal and freeze.

**Puree\*** (May develop a gritty texture because of tartrate crystals. The crystals will disappear when puree is heated):

Wash, stem, and crush grapes. Heat to boiling. Drain off juice and freeze it separately. Cool the crushed grapes and press them through a sieve.

*Add 1/2 cup sugar to 1 quart puree.*

Pack. Seal and freeze.

**GUAVA**, and guava-like fruits: "Pine-apple" and "Strawberry" guava

**Select fruit for these characteristics:**

Ripe  
Tender

Wash. Peel and cut in half. Cook until just tender in sirup.

*Use 1 to 2 cups sugar to 4 cups water.*

Cool. Pack. Cover with cold sirup.

Seal and freeze.

**MANGOS**

**Select fruit for these characteristics:**

Fully ripe, but firm (unripe fruit may give a bitter product)

Wash. Peel. Cut off and discard a slice of the stem end. Slice. Do not use the flesh near the seed. In most mangos it is quite fibrous.

**Sirup Pack:**

Put 1/2 cup sirup in each freezer container. Slice mangos directly into the cold sirup. *Use 20 to 35 per cent sirup, 1 to 2 1/2 cups sugar to 4 cups water.* Press slices down and add sirup to cover. Seal and freeze.

**Sugar Pack:**

Place mango slices in a shallow bowl. Sprinkle with sugar, using *1 part sugar to 8 to 10 parts fruit by weight (1/2 cup sugar to 5 to 6 cups mango slices).* Allow to stand a few minutes until sugar is dissolved. Mix gently. Pack. Seal and freeze.

**MELONS**

Best used while still frosty

**Select fruit for these characteristics:**

Fully ripe, but not soft  
Well-colored

**Varieties:**

Cantaloupe  
Casaba

Wash. Cut in half, remove seeds, and peel. Cut into slices, cubes, or balls.

**Sirup Pack:**

Put 1/2 cup sirup in each freezer container. Add melon, cover with cold sirup. *Use 30 per cent sirup, 2 cups sugar to 4 cups water.*

For a different flavor add one tea-

FRUIT	PREPARATION
<p><b>Melons (cont.)</b>  Crenshaw  Honeydew  Persian  Watermelon</p>	<p>spoon lemon juice to each cup sirup. Seal and freeze.  <b>Sugar Pack</b> for cantaloupe or watermelon:  Place cut melon in a shallow bowl. Sprinkle with sugar, using <i>one pound sugar (2¼ cups) to each 5 pounds cut melon</i>, about 12 cups. Allow to stand a few minutes. Mix gently. Pack. Seal and freeze.  <b>Unsweetened:</b>  Freeze without sugar or sirup, with waxed paper between layers. Use within one month.  <b>Fruit juices or Gingerale:</b>  Pineapple or orange juice are most satisfactory of the juices for flavor and color.  Gingerale packs need to be used while still frosty. Off-flavors seem to develop with some melons on thawing.</p>
<p><b>NECTARINES</b>  <b>Select fruit for these characteristics:</b>  Soft, ripe, but not mushy  Slightly blushed skin  Smooth firm texture free from fiber  <b>Varieties:</b>  Stanwick  Gower  Le Grand  Rose  Panamint  Freedom  Marigold  Fire Globe</p>	<p>Sort, wash, and pit. Peel, if desired.  Put ½ cup sirup into each freezer container. <i>Use 40 per cent sirup, 3 cups sugar to 4 cups water, plus ½ teaspoon ascorbic acid per quart sirup.</i>  Cut fruit into halves, quarters, or slices directly into cold sirup. Press fruit down and add sirup to cover. Seal and freeze.</p>
<p><b>ORANGES</b>  <b>Select fruit for these characteristics:</b>  Tree-ripened  Firm, ripe fruit which is heavy for its size  Free from spots  <b>Varieties:</b>  Any except Navel  (Navel oranges become bitter on freezing)</p>	<p>Wash. Peel, cutting deep enough to remove white membrane under skin.  Section, using stainless steel knife; remove membranes and seeds. Freeze with or without sirup.  <b>Sirup Pack:</b>  Pack. Cover with cold sirup. <i>Use 40 per cent sirup, 3 cups sugar to 4 cups liquid.</i> Liquid may be part juice from fruit. Seal and freeze.</p>



FRUIT	PREPARATION
<p><b>PEACHES</b>  <b>Select fruit for these characteristics:</b>  Firm, fine-grained flesh  Rich yellow or orange-colored flesh  Fully ripe  <b>Varieties:</b>  Elberta  J. H. Hale  Rio Oso Gem  Alamar  Red Haven  Red Globe</p>	<p>Wash. Peel; or immerse in boiling water for about 1 minute, then in cold running water; rub skins off. Put <math>\frac{1}{2}</math> cup sirup into each freezer container. <i>Use 40 per cent sirup, 3 cups sugar to 4 cups water plus <math>\frac{1}{2}</math> teaspoon ascorbic acid per quart sirup.</i> Halve or slice directly into cold sirup. Press fruit down and add sirup to cover. Seal and freeze.</p> <p><b>Whole, unpeeled:</b>  Use is limited to cooked dishes. Wash, dry. Pack in freezer bags. Seal and freeze.</p> <p><i>Note:</i> hold frozen peach under running cold water until the skins pull off easily with a knife. Cook at once, or fruit will darken badly.</p> <p><b>Peach Topping</b>—A blend of sliced peaches and puree:  Sort peaches, and use the ripest and softest for puree.</p> <p><i>Puree:</i>  Peel, mash, and strain if desired: 4 or 5 large-sized peaches will make about 3 cups puree.  <i>To 3 cups puree, add <math>\frac{1}{4}</math> teaspoon ascorbic acid to prevent browning.</i>  Add 1 package of powdered pectin. Stir well. Let stand 15 minutes; stir occasionally. <i>Add 3 cups of sugar and stir to dissolve the sugar.</i></p> <p><i>Slices:</i>  Peel and slice firm-ripe peaches. Cut slices in half.  Fill pint-size containers with about 1 cup sliced peaches and 1 cup of puree. Leave <math>\frac{1}{2}</math> to <math>\frac{3}{4}</math>-inch headspace. Seal and freeze.</p>
<p><b>PEARS</b>  <b>Select fruit for these characteristics:</b>  Picked green, and allowed to ripen to a good eating point (not soft)  <b>Variety:</b>  Bartlett</p>	<p>Wash, peel, and core. Quarter or slice. Dip in boiling sirup for 1 to 2 minutes. Chill.  <i>Add <math>\frac{1}{4}</math> teaspoon ascorbic acid or 1 tablespoon lemon juice to each cup of cold sirup. Use 40 per cent sirup—3 cups sugar to 4 cups water.</i>  Pack fruit. Cover with cold sirup. Seal and freeze.</p>

FRUIT	PREPARATION
<p><b>PERSIMMONS</b>  <b>Select fruit for these characteristics:</b>  Golden or orange color  Soft-ripe  Absence of strong astringent taste  <b>Varieties:</b>  Fuyu  Hachiya  Native Seedlings</p>	<p><b>Puree</b>  Wash, peel, cut into sections, press through a sieve.  <i>Mix 1 cup sugar with each 6 cups (3 pounds) puree.</i> Pack. Seal, freeze.  <b>Whole</b>—best when used within 3 months:  Wash. Dry. Remove stem ends. Freeze, unwrapped, on a tray.  Package in plastic bags or wrap individually in metal foil.  To use, hold the frozen fruit under water and slip or rub off the skins.  <i>Note:</i> Eat frozen persimmons before they are completely thawed, or fruit will darken and become very limp and soft.</p>
<p><b>PINEAPPLE</b>  <b>Select fruit for these characteristics:</b>  Fully ripe (top leaves will pull out easily)  Full aroma and flavor</p>	<p>Peel, remove core and eyes, cut in wedges, cubes, sticks, thin slices, or crush.  Pack. Cover with cold sirup. <i>Use 30 per cent sirup—2 cups sugar to 4 cups water.</i> Seal and freeze.  <i>Note:</i> If you use frozen pineapple in a gelatin dessert, bring it to a boil and simmer 2 to 3 minutes, cool if necessary. Raw pineapple, either fresh or frozen, contains an enzyme which causes gelatin to liquefy.</p>
<p><b>PLUMS, including Fresh Prunes</b>  <b>Select fruit for these characteristics:</b>  Fully ripe  Sweet  Good deep color, no green  Tree-ripened  <b>Varieties:</b>  Stanley  Hungarian Prune  Santa Rosa  Gaviota  Duarte  Wickson  Standard</p>	<p>Wash. Cut in halves or quarters. Pit.  <b>For use as Sauce and in Uncooked Desserts:</b>  Put <math>1\frac{1}{2}</math> cup sirup in each freezer container; add fruit. Press down. <i>Use 40 per cent sirup—3 cups sugar to 4 cups water, plus 1 teaspoon ascorbic acid per quart sirup.</i>  Add cold sirup to cover. Seal and freeze.  <b>For Pies or other Cooked Dishes:</b>  <i>Mix 1 pound (2¼ cups) sugar with 4 pounds plums.</i> Pack. Seal, freeze.  <b>Whole, unsweetened</b>—For no longer than 3 months' storage unless cooked:  Wash. Dry. Package in plastic bags. Seal and freeze.</p>

FRUIT	PREPARATION
<b>POMEGRANATES</b> <b>Select fruit for these characteristics:</b> Fully ripe <b>Variety:</b> Wonderful	Wash. Cut in half, place cut face down and rap the shell firmly with a blunt instrument, such as a hammer handle. The section walls will break and the juice sacs will be exploded outward. Pack in containers and cover with cold sirup. <i>Use 30 per cent sirup—2 cups sugar to 4 cups water.</i> Seal and freeze.
<b>RHUBARB</b> <b>Select fruit for these characteristics:</b> Firm stalks Tender Well-colored Few fibers <b>Varieties:</b> Cherry Strawberry	Wash, trim, and cut into 1- or 2-inch pieces, or in lengths to fit the package. <b>Unsweetened:</b> Rhubarb may be packed raw, but will keep better color and flavor if blanched in boiling water for 1 minute. Cool in ice water or in running cold water. Drain. Pack tightly. Seal and freeze. <b>Sirup Pack:</b> Pack raw or blanched rhubarb tightly. Cover with cold sirup. <i>Use 40 per cent sirup—3 cups sugar to 4 cups water.</i> Seal and freeze. <b>Sauce:</b> Cook as usual, adding sugar to taste. Cool. Pack. Seal and freeze.
<b>STRAWBERRIES</b> <b>Select fruit for these characteristics:</b> Full-red color Vine-ripened Fully ripe, but not overripe No center cavity <b>Varieties:</b> Shasta Lassen Solana Wiltguard	Handle berries gently to avoid bruising. Do not hull before washing. Wash a few at a time in cold or ice water. Drain thoroughly. Hull. Strawberries sliced and mixed with dry sugar maintain firmness, flavor, and color best, and can be stored for a longer time. Large berries should be sliced or crushed. Medium and small-sized berries can be left whole. <b>Sliced or Crushed:</b> Slice berries lengthwise, or in $\frac{1}{4}$ -inch slices, or crush. <i>Add <math>\frac{3}{4}</math> to 1 cup sugar to 1 quart berries.</i> Mix carefully. Let stand a few minutes for sugar to dissolve. Pack. Seal and freeze.

FRUIT	PREPARATION
Strawberries, (cont.)	<p><b>Whole</b>—Whole berries retain better quality if covered with sirup. If frozen without sugar or sirup, use berries while still partially frozen to avoid mushiness. Use within 3 to 4 months, unless cooked.</p> <p><i>Sirup Pack:</i> Put washed and drained berries into containers. Cover with cold sirup. Use 40 to 50 per cent sirup—3 to 4¾ cups sugar to 4 cups water. Seal and freeze.</p> <p><i>Unsweetened Pack:</i> Spread washed and thoroughly drained berries on shallow trays or pans. Place in freezer until frozen solid. Pack in plastic bags or containers. Seal and freeze.</p>

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**WATERMELON**—see Melon

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### *What Quantities Can You Expect When Freezing Fruit?*

FRUIT	FRESH, AS PURCHASED OR PICKED	FROZEN
<b>APPLES</b>	“Northwest” Box (40 pounds) 1¼ to 1½ pounds	27 to 32 pints 1 pint
<b>APRICOTS</b>	Lug (24 pounds) ⅔ to ⅞ pounds	30 to 36 pints 1 pint
<b>AVOCADOS</b>	4 medium-sized	1 pint
<b>BERRIES</b> (except raspberries and strawberries)	12 basket tray, ½-pint baskets (6 to 8 pounds) 2 to 3, ½-pint baskets	4 to 6 pints 1 pint
<b>CANTALOUPE</b>	1 dozen (28 pounds) 1 to 1¼ pounds	22 pints 1 pint
<b>CHERRIES</b> , sweet or sour	Lug (23 to 27 pounds) 1¼ to 1½ pounds	15 to 18 pints 1 pint



FRUIT	FRESH, AS PURCHASED OR PICKED	FROZEN
<b>COCONUT</b>	1 to 1¼ coconuts	1 pint
<b>CRANBERRIES</b>	1 box (25 pounds) 1 peck (8 pounds) ½ pound	50 pints 16 pints 1 pint
<b>CURRENTS</b>	2 quarts (3 pounds) ¾ pound	4 pints 1 pint
<b>FIGS</b>	5 to 6 pound box ¾ to 1 pound	6 to 7 pints 1 pint
<b>GRAPEFRUIT</b>	2 medium (2 pounds)	1 pint
<b>GRAPES</b>	Lug (28 pounds) 4 basket crate (20 pounds) 2 pounds	14 to 16 pints 10 to 12 pints 1 pint
<b>MANGOS</b>	2 to 3 medium mangos	1 pint
<b>NECTARINES</b>	Lug (average 20 pounds) 1 to 1½ pounds	13 to 20 pints 1 pint
<b>ORANGES</b>	3-4 medium oranges	1 pint
<b>PEACHES</b>	Bushel (46 to 50 pounds) Lug (average 20 pounds) 1 to 1½ pounds	30 to 50 pints 13 to 20 pints 1 pint
<b>PEARS</b>	Lug (24 to 28 pounds) Pear box (46 pounds) 1 to 1¼ pounds	20 to 25 pints 37 to 46 pints 1 pint
<b>PERSIMMONS</b>	Lug (24 to 28 pounds) 2 to 3 medium	20 to 25 pints 1 pint
<b>PINEAPPLE</b>	5 pounds	4 pints
<b>PLUMS</b>	Lug (average 25 pounds) 3 quarts (5 pounds) 1 to 1½ pounds	16 to 25 pints 4 to 5 pints 1 pint
<b>RHUBARB</b>	Lug (25 to 30 pounds) ⅔ to 1 pound	25 to 45 pints 1 pint
<b>STRAWBERRIES</b>	12 basket tray, pint baskets (12 to 14 pounds) 1⅓ pints	9 to 10 pints 1 pint

# FREEZING VEGETABLES

Proper freezing of vegetables will preserve the quality. Here are the nine main steps for freezing vegetables at home:

**1. Choose young barely mature vegetables** of a recommended variety. Older ones do not freeze well.

**2. Freeze as soon after harvesting as possible.**

**3. Wash thoroughly** in cold water. Cut and sort according to size. Take care not to bruise vegetables.

**4. Heat before packing.** All vegetables, except peppers and parsley, need to be heated (blanched) before packaging to prevent loss in color, flavor, texture and nutritive value.

Follow the directions carefully for the blanching time for each vegetable. Some vegetables, such as pumpkin, winter squash and sweet potatoes are more satisfactory when completely cooked before freezing.

**For heating (blanching) in boiling water,** use a large kettle with a tight-fitting cover or a blancher. Place the vegetable in a wire basket, colander, cheese cloth bag, blanching basket, or

any container that allows free movement of the vegetables. For blanching and subsequent steps in freezing vegetables see photos below.

For each pound of prepared vegetables, use one gallon of boiling water in the kettle. Lower the vegetable in the briskly boiling water. Put lid on kettle or blancher. If it takes longer than one minute for the water to return to a boil, use less vegetables the next time. Start counting the blanching time as soon as the water returns to a boil.

You may use the water for blanching the same kind of vegetables as long as it is clear enough to use. Add boiling water to the blanching kettle as needed, to keep the volume of the water at the proper amount.

**5. Chill the heated vegetable** quickly and thoroughly. Plunge the basket of vegetables immediately from the boiling water into a large quantity of cold water—60°F or lower. Change the water frequently or use cold running water or iced water. It usually takes about as long to chill vegetables as it

Four important steps in freezing vegetables:

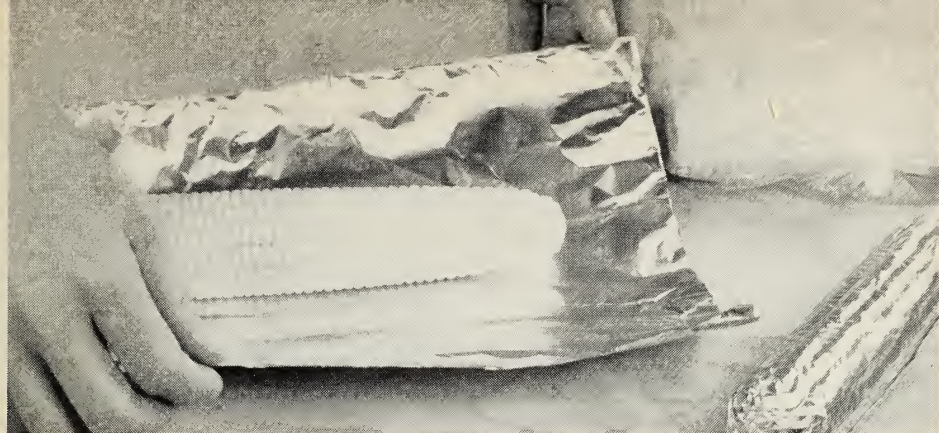
Blanching ...



Cooling ...







Corn is packaged singly, or in meal amounts.

does to heat them. Test the center of a piece of vegetable to be sure that it is thoroughly cold. Never package warm vegetables.

**6. Drain the vegetables well.** Remove the surface moisture completely. Dry the surface with clean dish towels or paper towels.

**7. Package the dry vegetable in a moisture-vapor-proof container.** Vegetables are usually packaged in plastic bags. An outside cover such as a cardboard box will give them a uniform shape for easier stacking and also pre-

vents tearing the bag. Wrap corn on the cob in aluminum foil or other freezer paper. Small amounts of chopped green pepper or chive can be wrapped in small packages of foil or plastic. A rigid-type container can be used for a solid pack of vegetables such as cooked winter squash.

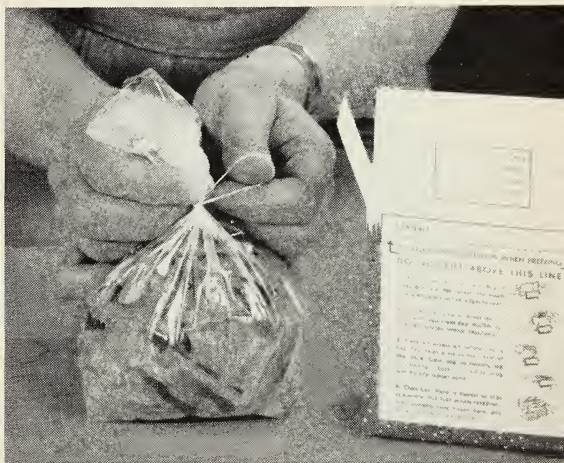
**8. Exclude as much air as possible (see photo, below).** Leave  $\frac{1}{2}$ " to 1" headspace for the solid pack. Seal according to directions for the type of package used.

**9. Label and freeze at once.**

Drying and packaging...



Excluding air from package, and sealing.



## How to Prepare Vegetables for Freezing

VEGETABLE	PREPARATION
<b>ARTICHOKES, GLOBE</b> Select small artichokes or artichoke hearts. <b>Variety:</b> Green Globe	Pull off outer leaves. Cut off top of bud. Trim stem. Wash thoroughly. <i>Blanch in a boiling solution of 1 tablespoon citric acid crystals, or ½ cup lemon juice, to 2 quarts water: small hearts—3 minutes; mature hearts—5 minutes; small whole artichokes—10 minutes.</i> Cool in ice water 5 to 15 minutes. Drain well. Pack. Seal and freeze.
<b>ASPARAGUS</b> Select green, well-colored, young tender spears with compact tips. <b>Varieties:</b> Mary Washington University of California Strains 500, 500W, 309, 711, 873	Sort according to size and thickness of stalk. Wash thoroughly. Cut or break off and discard tough parts of stalks. <i>Blanch in boiling water: small stalks—2 minutes; medium stalks—3 minutes; large stalks—4 minutes.</i> Cool at once in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>BEANS, LIMA</b> Select well-filled pods, which are easily opened. Beans should be green, not starchy or mealy. <b>Varieties:</b> <i>Large:</i> Fordhook Fordhook 242 Concentrated Fordhook King of the Garden Henderson <i>Baby: (Small-seeded varieties)</i> Clark's Bush Early Thorogreen Henderson Baby Fordhook	Shell. Sort for size. Wash. <i>Blanch in boiling water for 2 to 4 minutes according to size.</i> Cool at once in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>BEANS, SNAP</b> Select tender stringless beans that snap when broken, with seeds still small and tender. <i>Note:</i> Green beans yield a better product than do yellow. <b>Varieties:</b> <i>Pole Type:</i> Kentucky Wonder	Wash well; remove ends. Cut into 1-inch pieces or slice lengthwise (French style). <i>Blanch in boiling water for 2 to 3 minutes.</i> Cool in ice water or in cold running water from 3 to 5 minutes. Drain. Pack. Seal and freeze.



VEGETABLE	PREPARATION
<b>Beans, Snap (cont.)</b> Blue Lake strains <i>Bush Type:</i> Burpee Tendergreen Stringless Green Pod Pencil Pod Wade Black Valentine Bountiful Topcrop	
<b>BEETS</b> Select beets without woodiness. <b>Varieties:</b> Detroit Dark Red Crosby's Egyptian Early Wonder	<b>Very small, tender beets:</b> Wash, peel, leave whole or dice. <i>Blanch whole beets for 5 minutes; diced beets for 3 minutes.</i> Cool in cold running water. Drain. Pack. Seal and freeze. <b>Mature beets:</b> Wash. Leave stem and 1 inch of tops on. <i>Cook until tender.</i> Cool in cold running water. Rub off peels. Slice or dice. Pack. Seal and freeze.
<b>BROCCOLI</b> Select tight, compact, dark green heads, with tender stalks free from woodiness. <b>Varieties:</b> Waltham 29 De Cicco Green Sprouting, medium strain Coastal Topper 41	Wash and trim. Soak for 1½ hour in ¼ cup salt to 1 gallon cold water (to remove insects). Split lengthwise into pieces so that flowerets are not more than 1½ inches across. <i>Blanch in boiling water for 3 to 4 minutes.</i> Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>BRUSSELS SPROUTS</b> Select sprouts firm, compact, moderately large, and bright. <b>Varieties:</b> Long Island Improved Fancy Most Ferry Morse Strain	Wash thoroughly. Trim. Remove outer coarse leaves. Sort into small, medium, and large sizes. <i>Blanch in boiling water: small—3 minutes; medium—4 minutes; large—5 minutes.</i> Cool in ice water or in cold running water 6 to 8 minutes. Drain. Pack. Seal and freeze.
<b>CABBAGE</b> Select solid (tight) green and white heads. <b>Varieties:</b> Copenhagen	Discard outside and defective leaves. Cut heads into convenient-sized pieces. <i>Blanch in boiling water: 3 to 4 minutes, depending on size.</i>

VEGETABLE	PREPARATION
<b>Cabbage (cont.)</b> Danish Ballhead Chieftain (Savoy) Golden Acre Premium Late Flat Dutch	Cool in ice water or in cold running water 3 to 4 minutes. Drain well. Pack. Seal and freeze.
<b>CARROTS</b> Select carrots of bright orange color, young, tender, and small, without fibrous cores, sweet flavor. <b>Varieties:</b> Chantenay Long Imperator Danvers Half Long Nantes Coreless	Wash and peel very young, tender, small carrots; cut others into 1/4 inch cubes, thin slices, or lengthwise strips. <i>Blanch in boiling water: small, whole—5 minutes; cubes or slices—2 minutes; lengthwise strips—2 minutes.</i> Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>CAULIFLOWER</b> Select solid, well-formed snow white heads. <b>Varieties:</b> Christmas Pearl Snowball A Snowball X Snowball Y	Break or cut into pieces about 1 inch across. Wash well. If needed, because of insects, soak in salted water, 1 tablespoon salt to 1 gallon, for 10 to 15 minutes. <i>Blanch in boiling water for 3 minutes.</i> To help retain white color, 1 tablespoon salt or vinegar may be added to 1 gallon blanching water. Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>CELERY</b> Select crisp, tender stalks, free from coarse strings and pithiness. <b>Varieties:</b> Utah 10-B Utah 52-70 Utah D5	Trim. Wash thoroughly. Cut into 1-inch lengths. <i>Blanch in boiling water for 3 minutes.</i> Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>CELERY ROOT (Celeriac)</b> Select firm, crisp roots. <b>Variety:</b> Large Smooth Prague	Cut away leaves and root fibers. Scrub thoroughly. <i>Cook until almost tender, about 20 to 30 minutes.</i> Cool. Peel and slice or dice. Pack. Seal and freeze.
<b>CHAYOTE</b> Select fresh chayotes, heavy for size, with tender skins.	Wash. Remove stem and blossom ends. Do not peel. Dice. <i>Blanch in boiling water for 2 minutes.</i> Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>CHIVES</b> Select chives fresh, green. Do not store more than 2 months.	Wash, dry, and chop. <i>Blanching not necessary.</i> Pack in small amounts, convenient for use. Seal and freeze.

**CORN**

For best quality, pick corn immediately before freezing.

Select corn slightly immature. Milk should be thin and sweet, not thick and starchy.

**Varieties:**

Golden Cross Bantam  
Carmelcross  
Marcross  
Seneca Chief  
Victory Golden  
Spancross

*On the cob:*

Husk, remove silk, wash. Sort ears according to size.

*Blanch in boiling water: small ears—7 minutes; medium ears—9 minutes; large ears—11 minutes.*

Cool promptly in ice water or in cold running water until cob is completely chilled. Drain. Pack into containers or wrap in moisture-vapor-resistant material. Seal and freeze.

*Cut corn:*

Husk, remove silk, wash.

*Blanch in boiling water for 4 min.*

Cool promptly in ice water or in cold running water. Drain. Cut kernels from cob at about  $\frac{2}{3}$  the depth of the kernels. Pack. Seal and freeze.

**DASHEEN (or, Taro)**

Wash and peel. Dice or cut into strips. *Blanch in citric acid solution for 2 to 3 minutes.* Use 1 tablespoon citric acid crystals, or  $\frac{1}{2}$  cup lemon juice, to 2 quarts water.

Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.

**EGGPLANT**

Select eggplants of rich purple color, shiny smooth skin, and with seeds tender and not prominent.

*Note:* Most satisfactory for use in casseroles and cooked combination dishes.

Precooked eggplant is more satisfactory for freezing.

**Varieties:**

Black Beauty  
New Hampshire Hybrid  
Florida Market  
Fort Myers Market

Wash. Peel. Slice in  $\frac{1}{3}$  inch slices, or dice in  $\frac{1}{3}$  inch cubes.

*Blanch in boiling water for 4 minutes.*

Dip in a solution of 1 tablespoon citric acid (or  $\frac{1}{2}$  cup lemon juice) in  $2\frac{1}{2}$  pints cold water.

Cool in ice water or in cold running water 4 minutes. Drain. Pack. Seal and freeze.

**GINGER ROOT**

*Note:* To use, grate or slice the unthawed root. Any ginger root not used, rewrap and return to freezer.

Wash well and dry. Wrap whole, uncut, root in moisture-vapor-resistant material. Seal and freeze.

VEGETABLE	PREPARATION
<b>GRAPE LEAVES</b> Select young, tender leaves.	Wash well. <i>Blanch in boiling water for 1½ minutes.</i> Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>KOHLRABI</b> Select young and tender roots, with fresh tops. <b>Variety:</b> Early White Vienna	Cut off tops; wash thoroughly in cold running water. Peel, dice in ½ inch cubes. <i>Blanch in boiling water for 1 minute.</i> Cool in ice water or in cold running water about 5 minutes. Drain. Pack. Seal and freeze.
<b>MIXED VEGETABLES</b>	Prepare and <i>blanch each vegetable according to directions</i> ; cool each thoroughly and drain. Mix. Pack. Seal and freeze.
<b>MUSHROOMS</b> Select medium and small sizes; choose white, tight caps. <i>Note:</i> Prepare and freeze the same day as picked.	Handle carefully to prevent bruising; bruised mushrooms discolor rapidly. Wash thoroughly in cold running water. Cut off base of stem. Sort for size. Leave whole, as buttons, or slice. <i>Either</i> saute until tender in small amount of butter or margarine. Cool in air or set pan in which mushroom were cooked in cold water. <i>Or blanch in boiling water for 2 to 4 minutes</i> , adding 1 tablespoon lemon juice per quart water. Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.
<b>OKRA</b> Select young, tender green pods, which snap easily. <b>Varieties:</b> Clemson Spineless Emerald	Wash thoroughly. Cut off stems, but do not cut open seed cells. <i>Blanch in boiling water: small pods—3 minutes; large pods—4 minutes.</i> Cool in ice water or in cold running water. Drain. Leave whole or slice crosswise. Pack. Seal and freeze.
<b>PARSLEY</b> Select fresh, deep-green, curly plants. <b>Varieties:</b> Moss Curled Paramount Evergreen	Wash well, drain thoroughly or pat dry. Remove tough, coarse stems. <i>Do not blanch.</i> Package sprigs in small quantities. Seal and freeze. If chopped parsley is desired, chop while still frozen.



**PARSNIPS**

Select parsnips that are smooth, firm, and free from woodiness.

**Varieties:**

Hollow Crown  
All-America

Cut off tops, wash thoroughly in cold running water. Peel. Cut in 1/2 inch cubes or slices.

*Blanch in boiling water for 2 minutes.*

Cool in ice water or in cold running water about five minutes. Drain. Pack. Seal and freeze.

**PEAS**

Select pods well, but not tightly, filled. Slightly immature peas are better than old or starchy ones. Pods crisp and bright green.

**Varieties:**

Thomas Laxton  
Alderman  
Little Marvel  
World's Record  
Dark Skin Perfection  
Laxton's Progress

Shell. Wash, sort for size.

*Blanch in boiling water for 1 1/2 minutes.*

Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.

**PEAS, CHINESE, OR EDIBLE POD**

Select bright green, flat, tender pods.

**Varieties:**

Dwarf Grey Sugar  
Melting Sugar

Remove stem and blossom ends and any string. Wash well.

*Blanch in boiling water for 1 1/2 to 2 minutes.*

Cool in ice water or in cold running water. Drain. Pack. Seal and freeze.

**PEPPERS, GREEN OR RED**

Select deep green or deep red, with glossy skin, thick flesh, tender, but crisp.

**Varieties:**

California Wonder  
Ruby King  
World Beater  
Yolo Wonder

Wash. Remove stem and seeds. Cut in halves, slice or dice. *Do not blanch.* Pack. Seal and freeze.

**PUMPKIN**

Select mature, fine-textured pumpkins.

**Varieties:**

Connecticut Field  
Small Sugar  
Dickinson Field  
Sugar Pie

Wash. Cut into pieces, remove seeds and fibrous material. *Cook until soft* (steam or bake). Mash, or press through a sieve. Cool by placing container of pumpkin in ice water. Stir pumpkin occasionally. Pack. Seal and freeze.

**SOYBEANS, Edible**

Select pods well filled, but beans still green.

Wash. *Blanch, in pods, in boiling water for 4 to 5 minutes, depending on size.*

VEGETABLE	PREPARATION
<b>Soybeans (cont.)</b> <b>Variety:</b> Bansei	Cool in ice water or in cold running water at least 5 minutes. Shell directly into containers. Seal and freeze.
<b>SPINACH AND OTHER GREENS</b> Select young, tender leaves. <b>Varieties:</b> Nobel Viking Virginia Savoy Viroflay Bloomsdale Long Standing America Califlay Resistoflay	Wash very thoroughly to remove all sand or grit. Remove thick main stems. <i>Blanch in boiling water for 2 minutes; Collards—3 minutes; very tender leaves—1½ minutes. Agitate basket during blanching.</i> Cool thoroughly in ice water or in cold running water for at least 3 minutes. Drain thoroughly. Greens may be chopped before packing, if preferred. Pack. Seal and freeze.
<b>SQUASH, SUMMER VARIETIES</b> Select squash not fully matured, with small seeds and tender rind. <i>Note:</i> Not a very good frozen product. <b>Varieties:</b> Yellow Summer Crookneck Zucchini Early Prolific Straightneck Cocozelle Early White Bush Scallop	Wash thoroughly. Do not peel. Cut into ½ inch slices. <i>Blanch in boiling water for 3 minutes.</i> Cool in ice water or in cold running water 4 to 5 minutes. Drain well. Pack. Seal and freeze.
<b>SQUASH, WINTER VARIETIES</b> Select firm, mature squash. <b>Varieties:</b> Banana Golden Delicious Hubbard Table Queen (Acorn) Boston Marrow Butternut Buttercup	Wash. Open, remove seeds. Cut into pieces. <i>Cook until soft.</i> Mash or press through a sieve. Cool by placing container of squash in ice water. Stir squash occasionally. Pack. Seal and freeze.
<b>SWEET POTATOES</b> Allow mature potatoes to age 30 days before freezing. <i>Note:</i> Best to freeze puree for use in baked dishes. <b>Varieties:</b> Puerto Rico Yellow Jersey	Sort according to size. Wash. <i>Cook until almost tender.</i> Let stand at room temperature until cool. Peel, leave whole, cut in halves, slice, or mash. If desired, to prevent darkening, dip whole, halves, or slices in a solution of 1 tablespoon citric acid (or ½

VEGETABLE	PREPARATION
<b>Sweet potatoes (cont.)</b> Velvet Gold Rush U C 779	cup lemon juice) to 1 quart water for 5 seconds. To keep mashed sweet potatoes from darkening, mix 2 tablespoons orange or lemon juice with each quart of mashed sweet potatoes. Pack, leaving $\frac{1}{2}$ inch headspace. Seal and freeze.
<b>WATER CHESTNUTS</b> <i>Note:</i> Unused portions of canned water chestnuts may be frozen.	Wash and peel. If corns are dry, soak in water before peeling. <i>Do not blanch.</i> Pack. Seal and freeze.

### *What Quantities Can You Expect When Freezing Vegetables?*

VEGETABLE	FRESH, AS PURCHASED OR PICKED	FROZEN
<b>ARTICHOKES</b>	$1\frac{1}{4}$ inches when trimmed, 20 to 25 artichokes	1 pint
<b>ASPARAGUS</b>	1 crate (28 to 35 pounds) 1 to $1\frac{1}{2}$ pounds	18 to 25 pints 1 pint
<b>BEANS, LIMA, fresh in pods</b>	1 bushel (32 pounds) 2 to $2\frac{1}{2}$ pounds	12 to 16 pints 1 pint
<b>BEANS, snap</b>	1 crate (30 pounds) $\frac{2}{3}$ to 1 pound	30 to 45 pints 1 pint
<b>BEETS, without tops</b>	1 bushel (52 pounds) 1 lug (30 to 32 pounds) $1\frac{1}{4}$ pounds	35 to 42 pints 20 to 26 pints 1 pint
<b>BROCCOLI</b>	1 crate (20 pounds) 1 pound	20 pints 1 pint
<b>BRUSSELS SPROUTS</b>	4 quart boxes 1 pound	6 pints 1 pint
<b>CABBAGE</b>	1 to $1\frac{1}{2}$ pounds	1 pint
<b>CARROTS, without tops</b>	1 crate (50 pounds) $1\frac{1}{4}$ to $1\frac{1}{2}$ pounds	32 to 40 pints 1 pint
<b>CAULIFLOWER</b>	2 medium heads $1\frac{1}{3}$ pounds	3 pints 1 pint

VEGETABLE	FRESH, AS PURCHASED OR PICKED	FROZEN
<b>CELERY</b>	1 pound	1 pint
<b>CHAYOTE</b>	1½ to 2 pounds	1 pint
<b>CORN, in husks</b>	3 dozen crate	6 to 9 pints
	5 dozen crate	10 to 12 pints
	2 to 2½ pounds (6 to 8 ears)	1 pint
<b>EGGPLANT</b>	1 to 1½ pounds	1 pint
<b>OKRA</b>	1 to 1½ pounds	1 pint
<b>PARSNIPS</b>	1¼ to 1½ pounds	1 pint
<b>PEAS</b>	1 crate (30 pounds)	12 to 18 pints
	2 to 3 pounds	1 pint
<b>PUMPKIN</b>	1½ pounds	1 pint
<b>SPINACH</b>	1 to 1½ pounds	1 pint
<b>SQUASH, summer</b>	1 bushel (40 pounds)	32 to 40 pints
	1 lug (25 to 28 pounds)	20 to 28 pints
	1 to 1¼ pounds	1 pint
<b>SQUASH, winter</b>	1½ pounds	1 pint
<b>SWEET POTATOES</b>	⅔ pound	1 pint

## FREEZING MEAT AND POULTRY

### *Meat*

**Preparation.** Before preparing meat for freezing, chill the carcass to approximately 32° F. Hold at this temperature:

Pork, lamb, veal—24 hours.

Beef—at least 5 days, preferably 8 to 10 days.

Mutton—5 to 7 days.

Freezing does not sterilize meat. Freezing meat inactivates most of the enzymes and kills some of the bacteria and molds normally present in meat.

Make certain that all knives and other utensils and cutting blocks are thoroughly cleaned before use. Meat is only as clean after freezing as it was before freezing.

Freezing tenderizes meat to some extent, but will not change “tough” meat to tender meat.

After the carcass is chilled, cut it into pieces for the intended use—that is, for roasts, chops, etc.

Bone pieces with a high percentage of bone and trim off excess fat before



wrapping. This saves freezer space and freezing costs.

Shape meat into its most compact form to avoid air pockets.

**Wrapping.** Wrap in moisture-vapor-resistant paper, plastic, or foil especially designed for freezing.

Press wrapping firmly against meat, forcing out all air pockets. Two methods of wrapping are most efficient for meats and similarly shaped foods—the drugstore wrap and the butcher wrap.

*Drugstore Wrap* (see photos to right). Place the meat in the center of the paper. Use enough paper so that both edges can be folded down against the meat two or three times.

Bring the two edges of paper together above the meat and make a folding crease.

Fold down in  $\frac{1}{2}$ " to 1" folds until the paper is tight against the meat.

Press with your hands to work out as much air as possible at each end.

Fold ends of paper down and bring tightly back against the package.

Secure with freezer tape or string.

*Butcher Wrap.* Place the meat close to one corner of the paper.

Fold the corner of the paper down against the meat and fold the sides of the paper over the meat.

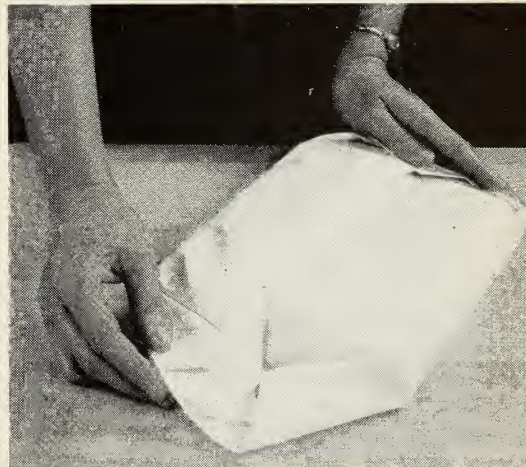
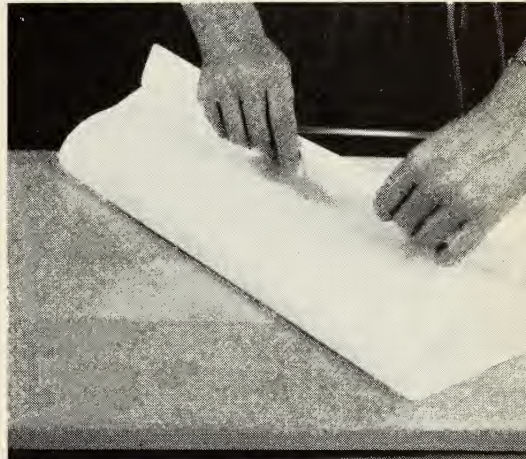
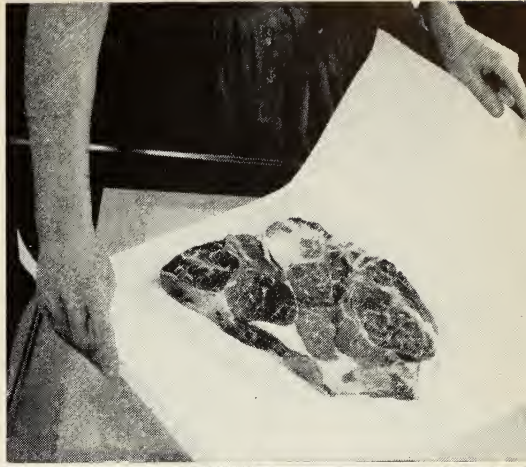
Roll the package over and over until all the paper is used. Secure with freezer tape or string.

*Other wrapping hints.* Stockinette is often used as an over-wrap to prevent tearing of the package if there are irregular pieces of bone.

*For steaks, chops, ground meat patties,* separate each layer of meat with two pieces of moisture-proof paper (see photo, page 36).

Adding salt or other seasonings shortens storage time. In general, it is better to leave seasoning of meat until it is being cooked.

Label with cut of meat, weight, or number of servings, and date.



Three steps of the drugstore wrap.



Each layer of steak, chop, and ground meat patty is separated from the next by two pieces of paper.

**Freezing.** Meats in the freezer should be brought down to at least 0°F within 24 hours.

In a home freezer, do not pack too full with unfrozen meats, or freezing will take place too slowly.

If there is more meat than can be frozen quickly in a home freezer, it is best to have it frozen at a locker plant.

Slow freezing causes some increase in the loss of meat juices when the meat is thawed and hastens the deterioration of quality during storage.

Freezer burn, a drying of the surface of meat, occurs when meat is not well wrapped. Freezer burn can result also from storing at too high a temperature or for too long a time.

Freezer-burned meat has a dry or spongy, light-colored surface and an off-flavor. It is safe to eat, but has lost quality.

Between 25 and 35 pounds of packaged meat can be stored in one cubic foot of freezer space. The amount varies with the shape of the meat packages and the storage space.

## Poultry

After cleaning fresh-killed poultry, place it in the refrigerator at a temperature below 40°F for 12 hours before freezing. This ensures maximum tenderness.

Chickens, ducks, geese, and turkeys may be frozen whole, halved, quartered or cut up.

Do not stuff poultry before freezing. Commercially stuffed frozen poultry is prepared under special conditions, frozen with extreme speed, and with special equipment. Most home freezers cannot duplicate these conditions. Because the stuffing takes some time to cool inside the bird during freezing and to thaw and reheat during roasting, food-spoilage and food-poisoning bacteria can grow in stuffings in home-frozen poultry.

**Whole Poultry.** Note: Wrap and freeze giblets separately because the liver begins to develop off-flavors after about 3 months. If you use the poultry within 3 months, you may wrap the giblets in freezer material and place them in the body cavity.

Tie leg ends of cleaned bird together. Press the wings close to the body.

Place bird in center of wrapping sheet—long way of the bird, long way of sheet (see photo, page 37).

Bring long sides of sheet over bird and fold together about 1 inch of the edges. Fold again as necessary to bring sheet tight and flat on top of the bird.

Press wrapping close to the bird to force air out.

At each end, fold corners toward each other. Fold ends upward and over until package is tight.

Poultry may also be packaged in plastic bags. Press out as much air as possible before fastening the bags. One way to do this is to dip the filled bag in ice water, holding the open end above the water. Press the bag against the poultry and press upwards, thus helping to expel the air.

**Half Birds.** Package halves together, or package each half separately. If halves are packaged together, place a double piece of moisture-proof paper between them.



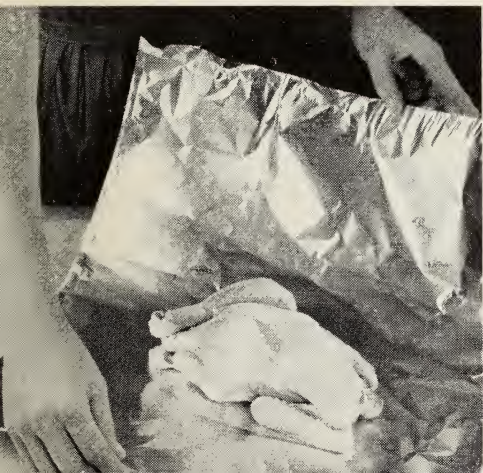
**Cut-Up Chicken or Turkey.** Cut the bird up, wash the pieces in cold water, and dry. Separate meaty pieces from bony pieces. Use bony pieces for broth.

Place meaty pieces close together in a freezer bag or carton. Or wrap in freezer paper. To make thawing quicker, separate each piece of poultry with a piece of freezer paper.

Darkening of the flesh of young chicken near the leg bones is due to seepage of blood from the marrow of the bones during freezing, thawing, and cooking. The only harm from this is in looks; the quality of the flesh is not affected in any way. (The darkened flesh is proof that you have young chickens, since older chickens do not show this change.) There is no practical method of avoiding this bone darkening in the home unless you bone the chickens before freezing. (See University of California, Agricultural Extension Service leaflets "Boning Poultry" and "Freezing Boned Chicken.")

When you buy fresh poultry wrapped in plastic film or in tray packs, and you plan to hold it for more than 3 months, remove the poultry from the film or pack, and rewrap in regular moisture-vapor-resistant freezer paper before freezing. The sooner the poultry is frozen after purchase, the better the quality will be when it is used.

Aluminum foil keeps air from poultry when molded tightly to the bird.



Preparing eggs for freezing includes the mixing of whites and yolks without whipping in air.

## Eggs

**Whole eggs.** Break eggs. Stir with fork or with a beater at slow speed, enough to thoroughly mix whites and yolks but not enough to whip in air (photo, above). Then strain through a food mill or medium-mesh strainer. This mixture may be gummy when thawed. To prevent this, add to each cup of eggs before mixing either one-half tablespoon sugar, corn syrup, or mild-flavored honey, or one-half teaspoon salt. Whether to add sweetening or salt depends on how you plan to use the eggs.

**Egg whites.** Separate from yolks. Be careful not to get even a droplet of yolk in the whites. Put whites through a food mill or medium mesh strainer.

**Egg yolks.** To each cup of yolks add one tablespoon sugar, corn sirup, or mild-flavored honey, or one-half teaspoon salt and mix thoroughly. Put through a food mill or strainer.

Packaging should include the following four steps:

1. **Package in rigid** containers, leaving head space, and seal.
2. **Use small enough** containers to hold just the quantity of eggs to be used at one time or for one recipe.

3. **Label**—whether whole eggs, yolks, or whites  
—amount, by number of eggs or weight  
—amount of ingredients, if any, added

- date  
—possibly, recipe in which eggs are to be used.

4. **Freeze** promptly and store at 0°F or lower.

## FREEZING FISH AND SHELLFISH

### *Fish*

Fish freezes well if kept cold and if cleaned and frozen quickly. Follow these six steps:

1. **Clean**, wash and drain fish well. Pat dry.
2. **Freeze small fish whole**. Cut large fish into steaks, fillets or into boned strips for freezing.
3. **To prevent darkening** and rancidity in fatty fish, such as tuna and salmon, dip in ascorbic acid solution (2 tablespoons ascorbic acid to 1 quart of water) for 20 seconds.
4. **Use moisture-vapor-proof** paper to wrap.
5. **Wrap in meal-size packages**. Separate pieces with two pieces of freezing paper, polyethylene wrap, or foil.
6. **Freeze quickly** and store at 0°F.

### *Shellfish*

Shellfish can be frozen by the following four steps:

#### **Shrimp**

1. **Remove heads**. Do not shell.
2. **Wash** in a dilute brine, 1 teaspoon salt to 1 quart water.
3. **Drain and package** in freezer containers.
4. **Seal and freeze**.

**Clam and oyster**—follow these five steps:

1. **Shuck or open** in the usual manner.

2. **Collect meat** in a strainer or colander and let drain; save the drained liquor.

3. **Wash thoroughly**, but quickly, in a salt solution of 1 tablespoon salt to a quart of water. Drain.

4. **Package**, cover with natural liquor or with salt solution (1 tablespoon salt to a quart of water). Leave ½" headspace.

5. **Seal and freeze**.

**Crab** is frozen by the following seven steps:

1. **Break off claws and legs**. Remove back shell. Remove the gills or "finger," crab butter, and other viscera. Wash thoroughly.

2. **Prepare for freezing** as soon as taken from water.

3. **Steam 15 to 20 minutes**, to preserve color and flavor.

4. **Cool** enough to handle. Pick meat from body and legs while warm. Keep leg and body meats separate.

5. **Package** in glass jars or freezer containers. Pack tightly to remove as much air as possible and to prevent formation of large ice crystals which cause the meat to toughen.

6. **Cover with a brine** of 3 level tablespoons salt to 1 gallon of water, if you intend to store for more than 4 months. Leave headspace.

7. **Seal and freeze**.



# HOW LONG CAN FOODS BE STORED?

How long food can be stored in the freezer depends on many things, such as the kind, quality, and preparation of the food, the kind of wrapping materials, and storage temperature. Meats containing a lot of fat will change flavor more quickly than lean meats. When air is not completely excluded in the package, food will have changes in color, flavor and texture more quickly.

Long storage impairs quality. Use first the food that has been stored the longest. The following storage times are a guide for foods stored at 0°F.

They indicate the times at which noticeable quality loss will have occurred. They do not indicate that the food is becoming unsafe to eat.

APPROX. STORAGE PERIOD AT 0°F	
Food	
<i>Fruits</i>	
packed in sugar or sirup	8-12 months
packed without sugar or liquid	3-6 months
<i>Vegetables</i>	8-12 months

<i>Meats</i>	
Beef	
Roasts, steaks	8-12 months
Ground	3-4 months
Cubed or pieces	6-8 months
Lamb	
Ground	3-4 months
Roasts, chops	8-12 months
Pork	
Roasts, chops	6-8 months
Ground, sausage	1-3 months
Pork or ham, smoked	1-3 months
Veal	
Cutlets, chops	4-6 months
Roasts	6-8 months
Variety meats	2-4 months
Poultry	
Chicken, cut up	5-6 months
Chicken, whole	6-12 months
Turkey	5-6 months
<i>Eggs</i>	6-12 months
<i>Fish</i>	

Fatty fish (mackerel, salmon, swordfish, etc.)	1-3 months
Lean fish (haddock, cod, etc.)	4-6 months
Shellfish	
Crabs and lobsters	1-2 months
Shrimp	4-6 months
Oysters	1-3 months
Clams	3-4 months
Scallops	3-4 months

# STORAGE TEMPERATURES

The temperature of your freezer is important. Keep a thermometer in the freezer. To insure best food quality, keep the temperature always to 0°F or lower. Each time the temperature fluctuates above 0°F, the quality of the food is affected. The following chart will show how fast vegetables lose quality as the temperature in the freezer rises. This chart can serve as a guide if your freezing facilities cannot be kept at 0° F.

## How Long Can Vegetables Be Stored?

If the temperature in your freezer is:	The quality of your vegetable will change after:
30°	5 days
25°	10 days
20°	3 weeks
15°	6 weeks
10°	3 months
5°	6 months
0°	1 year

# THAWING

Some foods need no defrosting before being cooked; others are best if partially or completely thawed. When foods are to be thawed, leave them in their sealed package. This helps prevent darkening and preserves the nutrients, especially vitamin C.

Food may be thawed in the refrigerator; at room temperature; or by running water over the packages. Thaw only enough food for one meal. Once food is thawed it should be cooked immediately.

## *Fruits*

Fruits packed in dry sugar thaw faster than those in sirup. Fruits without sugar or sirup take longer. Leave packages unopened to thaw. Turn package several times to insure uniform thawing. For plain fruit, salad, shortcake, or sundaes, serve fruit while a few ice crystals still remain. For pies, cobblers, tarts, or muffins, thaw only enough to spread.

Fruits darken and lose flavor rapidly once they are thawed.

When cooking frozen fruit, keep in mind how much sugar was added before the fruit was frozen.

## *Vegetables*

Most vegetables are not thawed before cooking.

For ease in separating the vegetable, partially thaw (one hour at room temperature) asparagus spears, broccoli, Brussels sprouts, cauliflower, kale, mustard greens, spinach, Swiss chard, turnip greens and other greens.

Corn on the cob is better when roasted. It should be completely thawed, then brushed with butter. Add salt and roast 20 minutes at 400° F (hot oven).

Blanching and freezing vegetables tenderizes them so they will cook in  $\frac{1}{2}$  to  $\frac{2}{3}$  the time of fresh vegetables.

## *Meats*

Meats may be started to cook either while completely frozen or after thawing. There is no difference in flavor, nutritive value, or juiciness. However, meats will cook and brown more uniformly when they are thawed before cooking.

Unwrap steaks and chops and separate the pieces to speed thawing. Keep the meat covered while thawing to prevent drying out.

Meat which has been thawed is cooked the same as fresh meat. Hard-frozen meats, cooked with moist heat, thaw more quickly than when cooked by dry heat.

When a frozen roast, put directly in the oven, is about half done, insert a meat thermometer and continue roasting until it is done to the desired stage.

The larger the piece, the greater the difference in cooking time required for hard-frozen and fresh meat. For example, a hard-frozen roast weighing under 5 pounds requires 15-20 minutes longer per pound than the corresponding nonfrozen roast. Roasts more than 5 pounds require 25-30 minutes longer for each pound.

For rare steaks, start to broil the meat while still frozen.

When broiling frozen steaks, place them 1 to 2 inches farther from the heat than normal until thawed. Then place the thawed steaks closer to the heat to brown. For pan broiling, start frozen steaks on low heat to thaw, then increase heat to brown.

## *Poultry*

In general, thaw poultry before cooking. A coating will not stick to frozen pieces of frying chicken.

Unwrap the package when thawing the cut-up chicken. Separate pieces and cover to prevent drying out.

## *Thawing Times*

Thawing Methods	Fruit (Sirup) 1 pint	Roast 4 Pounds	Steak 1 inch thick	Turkey 10-20 pounds	Cut-up Chicken 5 pounds	Fish 1 pound
Refrigerator	4-6 hours	14 hours	12 hours	2-3 days	10-20 hours	3-4 hours
Room temperature	2-3 hours	6 hours	2-3 hours	not recom- mended	4-5 hours	1 hour
In running water	½-1 hour	*	*	6-8 hours	1-3 hours	*

\* No information.

Thaw a whole bird until it is pliable. Leave wrapping on bird during thawing. Thaw the whole bird in the refrigerator, if you can, but you can thaw it in running water if the wrap is watertight. You can also partially thaw it in the refrigerator and finish it with running water.

Stuff a bird to be roasted just before it goes into the oven. As mentioned, stuffing the bird before freezing may lead to food poisoning. Cook poultry at moderate temperature. If not thawed before cooking, start at a lower temperature and allow more time.

### *Eggs*

One cup frozen eggs takes overnight to thaw in the refrigerator, or one to two hours at room temperature. Use promptly after thawing.

The white from a large-sized egg

measures about 2 tablespoons and one yolk measures about 1½ tablespoons.

### *Fish and Shellfish*

Fish may be cooked while it is still frozen or when it is partially thawed. Thaw fish in its original wrapping. Fish is best thawed in the refrigerator, but it can be done at room temperature, or by running water, if the wrapping is watertight.

A coating will not stick to hard-frozen fish. Hard-frozen fish is more likely to stick to a pan in cooking.

Fish to be used for chowder, soups and stews does not need to be thawed first.

To retain quality, start cooking fish when it is partially thawed, while some ice crystals still remain. Cook partially thawed or frozen fish at a lower temperature than usual and for a longer time. Do not overcook.

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*How to do it  
... in photos*

*New (and sometimes old)  
techniques are described  
and illustrated for better  
understanding of, at times,  
complicated subjects. The  
rule is, "If it can't be  
described, use a photo;  
if a photo won't do,  
draw a picture."*



## *Some Systems Work; Some Don't*

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